CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

NPDES NO. CA0084298

MONITORING AND REPORTING PROGRAM NO. R5-2004-_____

FOR
U.S. DEPARTMENT OF INTERIOR
FISH AND WILDLIFE SERVICE
LIVINGSTON STONE NATIONAL FISH HATCHERY
WINTER RUN REARING FACILITY
SHASTA COUNTY

INTRODUCTION

This Monitoring and Reporting Program is issued pursuant to California Water Code §13267 and §13383 and includes: influent monitoring of raw water supply, effluent monitoring of discharges to waters of the United States and waters of the State, and receiving water monitoring. All water quality samples shall be representative of the volume and nature of the discharge, or representative of the matrix of material sampled. The time, date, and location of sample collection shall be recorded in a logbook. Chain of custody (COC) form shall be completed for each sample collected and sent out for analysis and copies provided to the Regional Board with the monthly monitoring reports.

Water quality samples do not need to be taken during months when there are no pollutant discharges to surface waters resulting from aquaculture operations or associated on-site fish processing (e.g. no monitoring is required if no fish are being held at the facility, monitoring for specific chemicals or drugs only when being used and discharged to surface waters). However, monitoring forms are still required to be submitted on a monthly basis during these periods documenting no discharge. All water quality sampling and analyses shall be performed in accordance with the Monitoring and Reporting Requirements as outlined in Section C of the Standard Provisions of this Order. Water quality sample collection, storage, and analyses shall be performed according to 40 CFR Part 136, or other methods approved and specified by the Executive Officer in accordance with an approved Quality Assurance-Quality Control Program.

INFLUENT MONITORING

A sampling station shall be established and located where representative samples of the raw water supply can be obtained. Samples shall be collected at approximately the same time as effluent samples. Influent monitoring shall include at least the following:

Constituent	Unit	Type of Sample	Sampling Frequency
Influent flow	cfs	Calibrated meter	Recorded weekly
pH	standard units	Grab	1/month
Total Suspended Solids (TSS)	mg/L	8-hour composite	Annually[1]

[1] During month of highest feeding.

EFFLUENT MONITORING

Effluent samples shall be collected from the Outfall 001 downstream of the hatchery building, wild brood srock tanks, and granular activated carbon (GAC) filters after the last point at which wastes from the Facility may be introduced and prior to discharge into the Sacramento River. Effluent samples from Outfall 002 shall be collected after the rectangular rearing tanks (raceways) and brood stock tanks and prior to discharge into the Sacramento River. To address safety concerns, the discharger may continue to use 002A ***and*** 002B (as shown in Attachment B) to characterize the wastewater discharge from Outfall 002. However, an exceedence of an effluent limitation for Outfall 002 at ***either*** 002A or 002B shall be considered an exceedence of the effluent limitation for the entire discharge from Outfall 002. Effluent samples shall be representative of the volume and quality of the discharge. Effluent samples shall be collected during or immediately following tank or raceway cleaning or administration of drug or chemical treatments and must be representative of the volume and quality of the discharge at the time when representative levels of solids, drugs, chemicals, or other pollutants are present in the discharge. Time of collection of samples shall be recorded.

Effluent monitoring at **Outfall 001** shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency
Effluent flow	cfs	Calibrated meter	Recorded weekly
Total suspended solids (TSS)	mg/L	8-hour composite	Annually[1]
Net TSS (effluent minus influent)	mg/L	Net calculation	Annually[1]
Settleable solids	ml/L	Grab	1/month
pH	standard units	Grab	1/month
Conductivity @ 25°C[2]	µmhos/cm	Grab	1/month
Chloride[2]	mg/L	Grab	1/month
Formaldehyde[3]	mg/L	Grab	1/month during use
Malachite green[4]	mg/L	Grab	1/month during use
PVP Iodine[4]	mg/L	Grab	1/month during use
Chloramine-T[4]	mg/L	Grab	1/month during use

[1] During month of highest feeding.

[2] In months when sodium chloride is added to waters of the Facility, conductivity and chloride shall be measured during sodium chloride use.

[3] In months when formalin is added to the waters of the Facility (measured during use).

[4] The analytical method used for malachite green, PVP Iodine and chloramine-T shall be approved by the Executive Officer. If no approved methods are available effluent concentrations may be determined by calculation as approved by the Executive Officer. The method for malachite green shall have a reporting limit no greater than 10 µg/L. Concentrations shall be measured during use.

Effluent monitoring at **Outfall 002** shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency
Effluent flow	cfs	Estimated	Recorded weekly
Total suspended solids (TSS)	mg/L	8-hour composite	Annually[1]
Net TSS (effluent minus influent)	mg/L	Net calculation	Annually[1]
Settleable solids	ml/L	Grab	1/month
pH	standard units	Grab	1/month
Conductivity @ 25°C [2]	µmhos/cm	Grab	1/month
Chloride[2]	mg/L	Grab	1/month
Formaldehyde[3]	mg/L	Grab	1/month during use
Chloramine-T[4]	mg/L	Grab	1/month during use

[1] During month of highest feeding.
[2] In months when sodium chloride is added to waters of the Facility, conductivity and chloride shall be measured during sodium chloride use.
[3] In months when formalin is added to the waters of the Facility, formaldehyde concentration shall be measured during formalin use.
[4] The analytical method used for chloramine-T shall be approved by the Executive Officer. If no approved methods are available, effluent concentrations may be determined by calculation as approved by the Executive Officer. Concentrations shall be measured during use.

INTERNAL MONITORING – MALACHITE GREEN

When malachite green is added to a portion of the hatchery flow and the flow is subsequently treated by passage through the granular activated carbon (GAC) filters, the outflow from the GAC filters shall be monitored. To evaluate the effectiveness of the GAC filters, samples shall be collected directly from the outflow of the filters prior to commingling with other Facility wastesteams. The following shall constitute minimal monitoring and shall be determined using a method approved by the Executive Officer and with a reporting limit of no greater than 10 µg/L.

Constituent	Units	Type of Sample	Sampling Frequency
Malachite green	mg/L	Grab	1/quarter during use

INTERNAL MONITORING – GAC FILTER BACKWASH

Prior to discharging wastewater generated as result of backwashing the GAC filters, the Discharger shall contain the wastewater and sample for the following constituents:

Constituent	Units	Type of Sample
Volume of wastewater	gallons	Measurement
Total suspended solids (TSS)	mg/L	Grab
Settleable solids	ml/L	Grab
pH	standard units	Grab
Formaldehyde	mg/L	Grab
Malachite green	mg/L	Grab

RECEIVING WATER MONITORING IN THE SACRAMENTO RIVER

Receiving water upstream, between, and downstream of the discharge points (Outfalls 001 and 002) shall be visually monitored at approximately the same time as when influent and effluent samples are collected. Attention shall be given to the presence or absence of:

a. Floating or suspended matter
b. Discoloration
c. Bottom deposits
d. Aquatic life
e. Visible films, sheens, or coatings
f. Fungi, slimes, or objectionable growths
g. Potential nuisance conditions

Notes on receiving water conditions shall be summarized in the monitoring report.

MONTHLY DRUG AND CHEMICAL USE REPORT

The following information shall be submitted for all aquaculture drugs or chemicals used at the Facility:

a. The name(s) and active ingredient(s) of the drug or chemical.

b. The date(s) of application.

c. The purpose(s) for the application.

d. The method of application (e.g., immersion bath, administered in feed), duration of treatment, whether the treatment was static or flush (for drugs or chemicals applied directly to water), amount in gallons or pounds used, treatment concentration(s), and the flow in cubic feet per second (cfs) in the treatment units.

e. The total flow through the facility in cubic feet per second (cfs) to the Sacramento River after mixing with the treated water.

f. For drugs and chemicals applied directly to water (i.e., immersion bath, flush treatment) and for which effluent monitoring is not otherwise required, the estimated concentration in the effluent at the point of discharge to the Sacramento River.

g. The method of disposal for drugs or chemicals used but not discharged in the effluent.

Calculation of Concentration:

For drugs or chemicals used in a direct application to waters at the facility use the following formula to calculate concentration (C) at the point of discharge.

C = concentration of chemical or drug at the point of discharge

C = (treatment concentration) x (volume of water through treatment area during treatment time) ÷ (total volume of water to outfall during treatment time)

Example: Oxytetracycline concentration

$$C = \frac{\text{100.0 mg/L (oxytetracycline) x 80784 gallons water in treatment area during 1-hour treatment}}{\text{1,615,680 gallons of water to outfall in 1-hour}}$$

C = 5.0 mg/L oxytetracycline at the point of discharge

This information shall be submitted quarterly. If the analysis of this chemical use data compared with any toxicity testing results or other available information for the therapeutic agent, chemical or anesthetic indicates that the discharge may cause, have the reasonable potential to cause, or contribute to an excursion of a numeric or narrative water quality criterion or objective, the Executive Officer may require site specific whole effluent toxicity (WET) tests using *C. dubia* or reopen this Order to include an effluent limitation based on that objective.

PRIORITY POLLUTANT METALS MONITORING

The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP). The SIP states that the Regional Boards will require periodic monitoring (at least once prior to issuance and reissuance of a permit) for pollutants for which criteria or objectives apply and for which no effluent limitations have been established.

The Regional Board has determined that, based on priority pollutant data collected from this and similar facilities, discharge of priority pollutants other than metals is unlikely. Accordingly, the Regional Board is requiring, as part of this Monitoring and Reporting Program, that the Discharger monitor effluent and intake water (as a surrogate for receiving water upstream of the discharge) and analyze the sample for priority pollutant metals **one time at least 180 days but no more than 365 days prior to expiration of this Order.**

The Discharger must analyze pH and hardness of the effluent and intake water at the same time as priority pollutant metals. The priority pollutant metals for which this one-time analysis is required are as follows:

- Antimony
- Arsenic
- Beryllium
- Cadmium
- Chromium (III)
- Chromium (IV)
- Copper
- Lead
- Mercury
- Nickel
- Selenium
- Silver
- Thallium
- Zinc

Metals shall be analyzed by the USEPA methods listed below. Alternative analytical procedures may be used with approval by the Regional Board if the alternative method has the same or better detection level than the method listed.

Method Description	EPA Method	Constituents
Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)	1638	Antimony, Beryllium, Cadmium, Copper, Lead, Nickel, Selenium, Silver, Thallium, Total Chromium, Zinc
Cold Vapor Atomic Absorption (CVAA)	1631	Mercury
Gaseous Hydride Atomic Absorption (HYDRIDE)	206.3	Arsenic
Flame Atomic Absorption (FAA)	218.4	Chromium VI

All priority pollutant metal analyses shall be performed at a laboratory certified by the California Department of Health Services. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each constituent. The MDL should be as close as practicable to the USEPA MDL determined by the procedure found in 40 CFR Part 136. The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory.
b. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.
c. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration." Numerical estimates of data quality may be by percent accuracy (+ or – a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
d. Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

SEPTIC TANK MONITORING AND INSPECTIONS

Septic tank maintenance inspections shall be performed at least once per year and recorded in the annual report. Information concerning inspections and maintenance activities (including, but not limited to, pumping, replacement, and repairs) shall be included in the monitoring reports submitted to the Board.

LEACHFIELD MONITORING

The Discharger shall inspect leachfield areas weekly and submit the results in the monitoring report. Monitoring shall include any observations of seeps, erosion, field saturation, ponding liquid, the presence of nuisance, and other field conditions.

GENERAL REPORTING REQUIREMENTS

The Discharger shall implement the above monitoring program on the first day of the month following adoption of the Order. The Discharger shall submit monthly monitoring reports to the regional Board by the **first day of the second month** following sample collection (i.e., the January report is due by 1 March). Annual monitoring reports shall be submitted by the first day of the second month following each calendar year, respectively. All reports submitted in response to this Order shall comply with signatory requirements of Standard Provision D.6. Effective in January 2004, any NPDES effluent monitoring report received more than 30 days after its due date is subject to a $3000 Mandatory Minimum Penalty [Water Code Section 13385]. An additional $3000 penalty is required for each 30 days a report is late. If you have no discharge, you must still submit a report indicating that no discharge occurred, or you will be subject to the $3000 Penalties.

By **1 February** of **each year**, the Discharger shall submit a written Annual Report to the Executive Officer containing the following information:

1. A tabulation by month of the pounds of fish produced during the previous year including dates of operation and species and amount (lbs.) of fish harvested, processed, or released per month.

2. A summary of all feeding practices used at the facility on a monthly basis including:
    a. The name(s), type(s) and amount(s) of feed(s) used.
    b. The percent of phosphorus in the feed(s) used (as available).
    c. The method and frequency of feeding.

3. Monthly records documenting cleaning, inspections, maintenance, and repairs of all production and wastewater treatment systems.

4. Septic tank inspection and maintenance report.

5. GAC filter backwash report indicating the date and time filters were backwashed, total time of backwashing, volume of wastewater generated, method of disposal and, if discharged to surface waters, the duration of the discharge.

If the Discharger monitors any pollutant more frequently than is required by this Order, the results of such monitoring shall be included in the calculation of the values required in the monthly monitoring report. Such increased frequency also shall be indicated on the monthly monitoring report.

In the event the Discharger becomes aware of a violation of the prohibitions, specifications, or limitations of this Order, the Discharger shall notify the Board by telephone within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days.

In the event that there is failure in or damage to the structure of an aquatic animal containment system that results in an unanticipated material discharge of pollutants to waters of the United States or waters of the State, the Discharger shall provide an oral report within 24 hours describing the cause of the failure or damage and identifying the materials that have been released to the environment as a result of the failure or damage. Within 7 days of discovery of the failure or damage, the Discharger shall provide a written report documenting the cause, the estimated time elapsed until the failure or damage was repaired, and steps being taken to prevent a recurrence.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

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(Date)